

Case report



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Post-partum hemorrhagic shock following puerperal hematoma

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Abstract

Post-partum hemorrhage is the leading cause of maternal mortality, ranging from 18 to 50% of deaths worldwide. The puerperal hematoma is an unusual cause (also called peri-genital thrombi) with a frequency of 1/1000. They are formed in a paravaginal, paracervical or parametrial connective detachment, after vascular lesions. There are many favorable factors: primiparity, instrumental extraction, macrosomia, multiple pregnancies, vulvovaginal varices, difficult hemostasis, coagulation anomalies, and prolonged dilation. The "active" treatment of puerperal hematoma is based on surgery and/or arterial embolization. We report the case of a 23-year-old patient Para 2 Gravida 2, was admitted to our

structure for immediate post-partum hemodynamic instability with puerperal hematoma, after spontaneous vaginal delivery of a male neonate weighing 4400g. The physical examination on admission found a patient conscious, pale, collapsed; and the gynecological examination found a huge puerperal hematoma of 17cm/15cm, with a cervical lesion. The patient's condition began immediately in the emergency room. In the operating theater and under sedation; the puerperal hematoma was drained and the cervical lesion was sutured. A transfusion of 3 blood cells was sufficient for hemodynamic stability. The role of the anesthesiologist in management of obstetric hemorrhage is to maintain an optimal circulatory and respiratory state, to correct any coagulation disorders, while the obstetrician provides hemostasis gestures.

Introduction

Post-partum hemorrhage is the leading cause of maternal mortality, ranging from 18 to 50% of deaths worldwide [1,2]. Unusual causes include puerperal hematomas (also called peri-genital thrombi) with a frequency of 1/1000 deliveries [3]. They are easy to diagnose when they concern the vulva or the vagina, while pelvic (retro-peritoneal) locations require more exploration by obstetricians [4]. We report a case of expansive vulvar hematoma of the immediate post-partum, which was managed surgically.

Patient and observation

We report the case of a 23-year-old patient, with no specific medical or surgical history, Para 2 Gravida 2; the first pregnancy was without particularity with vaginal delivery, for this pregnancy she delivered vaginally without episiotomy of a healthy male neonate weighing 4400g. Patient transferred to our structure from a provincial hospital for immediate post-partum hemodynamic instability with puerperal hematoma. The physical examination on admission found a patient conscious, pale, collapsed; heart rate of 140 beats per minute and a

blood pressure of 70/40 mmHg, a prolonged capillary refill time with rapid shallow breathing. The gynecological examination found a huge puerperal hematoma of 17cm/15cm (Figure 1), with vaginal bleeding. The patient's condition began immediately in the emergency room; two large caliber venous catheters are put in place and infusion of one liter of physiological saline with 40 IU of oxytocin, 1g of antifibrinolytic, we started at the same time oxygen by high concentration mask and then we began the uterine massage and the administration of prostaglandin rectally. In the operating theater, sedation was performed with 50 mg of ketamine and 50 gamma of fentanyl, the surgical treatment consisted of incising and removing the blood clot (Figure 2), successful hemostasis was achieved with X-shaped sutures. The examination of internal genital tract with valves objectified a cervical lesion which was sutured. A transfusion of 3 blood cells was sufficient for hemodynamic stability without the use of vasoactive drugs. The patient went after the surgery to intensive care unit for post-operative monitoring and then transferred to a gynecology department for rehabilitation.

Discussion

If the classic definition of post-partum hemorrhage corresponds to blood loss of more than 500 ml [5], many authors have shown that the impact on the maternal circulatory state was only real for a hemorrhage greater than 1000 ml [6]. During a caesarean, the hemorrhage is said to be significant if the losses exceed 1,000 ml [5]. Another definition of post-partum hemorrhage takes into account patients with a 10-point loss of hematocrit level or a need for transfusion [7]. Post-partum hemorrhage is related to three predominant causes: uterine atony, abnormalities of placental insertion and sores of the genital tract [8]. The puerperal hematoma is a complication known since antiquity. The management of PH has improved considerably. PH mortality is exceptional these days and the current incidence is estimated at 1/1000 deliveries, PH nonetheless remains a potentially

serious complication. In the majority of cases, the bleeding is not exteriorized, there are many favorable factors: primiparity, instrumental extraction, macrosomia, multiple pregnancies, vulvovaginal varices, difficult hemostasis, coagulation anomalies and prolonged dilation [9]. They are formed in a paravaginal, paracervical or parametrial connective detachment, after vascular lesions. The bleeding spreads into the fatty tissue with the possibility of an upward extension in the base of the broad ligament and the retroperitoneum. The vascular rupture is often venous in the thickness of the vagina with lamination of the wall and diffusion along the fascias. In most cases, the hematoma is moderate in size, but it can break and increase in volume even secondarily [9,4].

Any post-partum hemorrhage that occurs after delivery requires uterine revision to confirm: lack of retained placenta, uterine emptiness, and integrity of the uterine cavity. At the same time, an intense and constant uterine massage must be performed in order to obtain uterine retraction and a safety globe. It must not be interrupted early in any case. Concomitantly, an injection of uterotonics (usually oxytocin) should be given [8]. If the bleeding continues, after confirmation of uterine emptiness and the absence of uterine rupture, the examination of the external and internal genital tract should be carried out using valves. This examination will be done under anesthesia, systematically performed if the delivery was traumatic with or without instrumental extraction, or if it was particularly rapid, if it was a macrosome or if the suture of the episiotomy was difficult. Inspection of the genital tract makes it possible to diagnose up to 9% of the causes of post-partum hemorrhage [10] and to offer surgical treatment for vaginal hematoma, vaginal and/or cervical tears, which are responsible for 20% of post-partum transfusions [11]. The medical treatment of hemorrhagic shock secondary to a puerperal hematoma is based on the correction of hypovolemia and possible coagulation disorders. As with any hemorrhage, it is crucial to quantify blood loss in order to anticipate complications.

Prophylactic antibiotic therapy is proposed [9]. Otherwise, the recognition of signs of gravity previously mentioned must rapidly allow the transfusion of Labile Blood Product according to known and pre-established protocols. Nowadays two types of transfusion strategies can be described.

The first recommends the early intensification of plasma and platelet transfusions and the increase in plasma / concentrated red blood cell ratios. The authors recommend the administration of high ratios between 1/2 and 1/1 close to whole blood and called "massive transfusion pack" [12]. The other strategy is to guide the management of blood loss by analyzing hemostasis disorders with a thromboelastogram device. These allow rapid detection of hypofibrinogenemias, with a good correlation with laboratory results [13]. The predictive nature of a decrease in fibrinogen concentration is an argument for considering a benefit from the early administration of fibrinogen concentrates in the management of post-partum hemorrhages. Plasmas in this context pose two types of problems: the delays in obtaining them, especially in high ratios. [14] Conventionally recommended volumes plasma transfusion does not provide enough fibrinogen when the hemorrhage is massive [15]. The administration of fibrinogen concentrates could more quickly correct the plasma fibrinogen concentration [16]. Hyperfibrinolysis can also be detected by thromboelastography [17]. Tranexamic acid is an effective antifibrinolytic to reduce bleeding in cardiovascular or orthopedic surgery but also in severe trauma [18]. The lesional treatment varies according to the characteristics of the Puerperal Hematoma. Benrubi *et al.* have shown that expectancy is associated with an increase in secondary interventions, infections, transfusions, prolonging the hospital stay, especially when the product of the longitudinal and transverse diameters of the hematoma is greater than 15 cm [19]. The "active" treatment of puerperal hematoma is based on surgery and/or arterial embolization. Surgical treatment consists of incising the lesion and removing the clots.

Hemostasis is often difficult and X-shaped sutures must be performed with a round needle to limit tissue laceration. The use of vascular clips can be useful and drainage is recommended. Vaginal tamponade is performed and left in place 24 to 48 hours. An indwelling bladder catheter is essential for the duration of wicking to avoid urinary retention by urethral compression. Removal of tamponade can be complicated by bleeding [4].

Conclusion

The puerperal hematoma represents an unpredictable and rare but not exceptional event for which each obstetrician must be prepared. The treatment is simple most often but it should never be neglected. In the situation of persistent post-partum hemorrhage or post-partum hemorrhagic shock, the main role of the anesthesiologist is to maintain an optimal circulatory and respiratory state, to correct any coagulation disorders, while the obstetrician provides hemostasis gestures. Early and formalized management of obstetric hemorrhage can help reduce the morbidity and mortality linked to this pathology.

Competing interests

The authors declare no competing interest.

Authors' contributions

Anas Elbouti, contributions to conception and design, acquisition of data, analysis and interpretation of data; drafting the article and final approval of the version to be published. Yassine Smiti, contributions to conception and design, acquisition of data, drafting the article, revising it critically for important intellectual content and final approval of the version to be published. Adnane Hniad, contributions to conception and design, acquisition of data, analysis and interpretation of data, revising it critically for important intellectual content and final approval of the version to be published. Amine Belghiti, contributions to conception and design, acquisition of data, analysis

and interpretation of data; revising it critically for important intellectual content and final approval of the version to be published. Anas Saoud Tazi, contributions to conception and design, acquisition of data, analysis and interpretation of data; revising it critically for important intellectual content and final approval of the version to be published.

Figures

Figure 1: puerperal hematoma before the evacuation

Figure 2: puerperal hematoma after the evacuation

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Figure 1: puerperal hematoma before the evacuation



Figure 2: puerperal hematoma after the evacuation